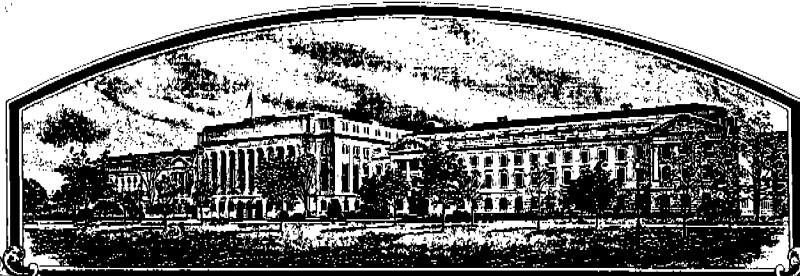


No.



7300040

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

National Seed Development Organisation Ltd.

Whereas, THERE HAS BEEN PRESENTED TO THE
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *fifteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS OFFICIAL SEED OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (34 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

BARLEY

'Maris Mink'

In Testimony Whereof, I have hereunto set
my hand and caused the seal of the Plant
Variety Protection Office to be affixed
at the City of Washington, DC
this 19th day of July in
the year of our Lord one thousand nine
hundred and seventy-six

Attest:

[Signature]
Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

[Signature]
Secretary of Agriculture

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: See Reverse.

1. VARIETY NAME OR TEMPORARY DESIGNATION MARIS MINK	2. KIND NAME BARLEY	FOR OFFICIAL USE ONLY PVPO NUMBER 730 140	
3. GENUS AND SPECIES NAME Hordeum vulgare	4. FAMILY NAME (Botanical) Gramineae	FILING DATE 12/19/72	TIME 300 A.M. P.M.
	5. DATE OF DETERMINATION 1964	FEE RECEIVED \$ 750	CHARGES —
6. NAME OF APPLICANT(S) National Seed Development Organisation Ltd.	7. ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) Newton Hall, Newton, Cambridge, England	8. TELEPHONE AREA CODE AND NUMBER	
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (Corporation, partnership, association, etc.) Corporation	10. STATE OF INCORPORATION United Kingdom	11. DATE OF INCORPORATION 1967	

12. Name and mailing address of applicant representative(s), if any, to serve in this application and receive all papers:

**H.N.Greenwood,
Chief Executive,
National Seed Development Organisation Ltd.,
Newton Hall, Newton, Cambridge, England.**

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- ☒ 12A. Exhibit A, Origin and Breeding History of the Variety (See Section 52, P.L. 91-577)
- ☒ 12B. Exhibit B, Botanical Description of the Variety
25 1/23/73
- ☒ 12C. Exhibit C, Objective Description of the Variety
- ☒ 12D. Exhibit D, Data Indicative of Novelty
- ☒ 12E. Exhibit E, Statement of the Basis of Applicant's Ownership

The applicant declares that a viable sample of basic seed of this variety will be deposited upon request before issuance of a certificate and will be replenished periodically in accordance with such regulations as may be applicable. (See Section 52, P.L. 91-577).

14A. Does the applicant(s) specify that seed of this variety be sold by variety name only as a class of certified seed? (See Section 83(a), P.L. 91-577) (If "Yes," answer 14B and 14C below.) <input checked="" type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
14B. Does the applicant(s) specify that this variety be limited as to number of generations? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	14C. If "Yes," to 14B, how many generations of production beyond breeder seed? Three

Applicant is informed that false representation herein can jeopardize protection and result in penalties.

The undersigned applicant(s) of this sexually-reproduced novel plant variety believes that the variety is distinct, uniform, and stable as required in Section 41 and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act (P.L. 91-577).

12 December 1972
(DATE)

H.N.Greenwood, Chief Executive
(SIGNATURE OF APPLICANT)

EXHIBIT A : Origin and Breeding History

MARIS MINK SPRING BARLEY

Origin : (Emir x Swallow) x Deba Abed.

Breeder : Plant Breeding Institute,
Maris Lane,
Trumpington,
CAMBRIDGE, England.

Date of Determination : F₁ produced in 1964

Breeding Method: Single plant selection by pedigree method
to F₆. F₆ line then bulked for multiplication.

Variants : The variety is distinct, and no variants of
significance were detected during multiplication.

Stability : The variety was placed on the United Kingdom
Index of Plant Varieties in November 1972
after official tests.

EXHIBIT B : Botanical Description

MARIS MINK SPRING BARLEY

EAR

- General - Two-row, narrow, parallel, medium length, semi-lax; sterile spikelets divergent, medium sized with rounded tips, awns rough, longer than ear.
- Collar - Platform or shallow cup type.
- Rachis - First segment medium in size and curvature, with moderate margin hair. Segments in mid third of ear are of average size, straight or slightly humped in profile with numerous margin hairs.

GRAIN

- General - Average sized, skin rather thick, finely wrinkled; anthocyanin pigment retained weakly in lemma nerves at maturity.
- Base of lemma-Bevelled.
- Rachilla - Medium length; hair type long; hairs at apex medium to long.
- Spicules - Sparse on inner lateral nerves.
- Ventral furrow-Glabrous.
- Lodicules - Intermediate "collar" type.

FIELD CHARACTERS

Habit of growth at tillering semi-prostrate; leaves of medium size with strong spiral, average green in colour; leaf sheaths glabrous and weakly pigmented. At shooting, leaves semi-erect in attitude. At earing, flag leaves erect to horizontal in attitude, average sized with pigmented auricles. After earing, whole plant strongly glaucous; awn tips pigmented; neck short or "negative" (not fully emerged from sheath); ears pendulous at maturity. Reaction to DDT - susceptible.

NSDO

RAN/OCG.

NATIONAL SEED DEVELOPMENT ORGANISATION LTD
Newton Hall
Newton
CAMBRIDGE
Telephone Cambridge 871167
Telex 81577
Telegrams Nasdo Cambridge

21st November, 1973.

Dear Mr. Evans,

Plant Variety Protection : Application No.73040
Barley : 'Maris Mink'

Thank you for your letter of 6th November asking for a revision of Exhibits A and D.

Maris Mink is still undergoing tests with the Plant Variety Rights Office in the United Kingdom and the most recent report on material tested by the Office in 1973 shows that no variants were recorded.

One application compared Maris Mink with Pirolina as a variety known both in the UK and the USA. In fact it is not the most similar variety and 'Maris Mink' most closely resembles 'Deba Abed' except that Maris Mink's ear emergence date is 5 days earlier and it is approximately 4 inches shorter.

Yours sincerely,



R.A. Newman.

Kenneth H. Evans, Esq.,
United States Department of Agriculture,
Agricultural Marketing Service,
6525 Belcrest Road,
Hyattsville,
Maryland 20782,
U.S.A.

Directors: M. G. Falcon J.P. (Chairman) J. G. Keeling (Vice Chairman) W. H. M. Gill Sir David Lowe C.B.E. D.Sc.
J. Linn Morton A. F. Shaw J.P. J. F. Shearer C.B.E. F.C.A. Professor Watkin Williams D.Sc. M.Sc.
Chief Executive H. N. Greenwood B.Sc (Agric) Secretary P. W. Rose A.C.I.S.
Registered in London—No. 899870 Registered Office—Newton Hall, Newton, Cambridge

Exhibit D : Data indicative of novelty

Maris Mink spring barley

<u>Character</u>	<u>Maris Mink</u>	<u>Deba Abed</u>
No. of rows	2 - row	2 - row
Lodicule length (type)	Intermediate (collar)	Intermediate (collar)
Rachilla hair length	Long	Long
Spicules on inner lateral nerves	Absent	Absent
Ventral furrow hair	Absent	Absent
Pigment	Present	Present
Basal leaf sheath hair	Absent	Absent
DDT reaction	Susceptible	Susceptible
Juvenile plant growth habit	<i>Semi-prostrate</i> Prostrate <i>est 3/15/76</i>	Prostrate
Ear emergence date	- 5 days	0
Awn length compared with ear	Longer ($\times 1\frac{1}{4}$ to $\times 1\frac{1}{2}$)	Equal or slightly longer
Straw length	- 10cm	0
Neck length	'Negative' to short	'Negative' to short
	Negative means ear does not emerge fully from sheath	
First rachis segment : length	Medium	Medium
: width	Medium	Medium
: curvature	Medium	Medium
Rachis segment in mid-third	Moderately humped	Moderately humped
Awns	Rough	Rough
Pigment in nerves - ear green	Weak to weak - medium	Weak to weak -medium
Colour of plant	Medium dark	Medium dark

NSDO

NATIONAL SEED DEVELOPMENT ORGANISATION LTD
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Newton
CAMBRIDGE
Telephone Cambridge 871167
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Telegrams Nasdo Cambridge

EXHIBIT E

The National Seed Development Organisation Ltd.
is the general commercial agent for United Kingdom state-
aided plant breeding stations and in this capacity
submits this application for a Plant Variety Protection
Certificate for MARIS MINK spring barley on behalf of the
breeder, the Plant Breeding Institute, Trumpington,
Cambridge, England.

12 December 1972



H.N. Greenwood
Chief Executive.

OBJECTIVE DESCRIPTION OF VARIETY
BARLEY (HORDEUM VULGARE)

INSTRUCTIONS: See Reverse.

NAME OF APPLICANT(S)

National Seed Development Organisation Ltd.

ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)

Newton Hall, Newton, Cambridge.

FOR OFFICIAL USE ONLY

PVPO NUMBER

73040

VARIETY NAME OR TEMPORARY
DESIGNATION

Maris Mink

Place the appropriate number that describes the varietal character of this variety in the boxes below.

Place a zero in first box (i.e. or) when number is either 99 or less or 9 or less.

1. GROWTH HABIT:

 1 = SPRING 2 = FACULTATIVE WINTER 3 = WINTER Early Growth: 1 = PROSTRATE 2 = SEMIPROSTRATE
3 = ERECT

2. MATURITY (50% Flowering):

 1 = EARLY (California Mariout) 2 = MIDSEASON (Betzes) 3 = LATE (Frontier) No. of days Earlier than } 1 = BETZES 2 = CALIFORNIA MARIOUT 3 = CONQUEST 4 = DICKSON No. of days Later than } 5 = PIROLINE 6 = PRIMUS 7 = UNITAN

3. PLANT HEIGHT (From soil level to top of head):

 1 = SEMIDWARF 2 = SHORT (California Mariout) 3 = MEDIUM TALL (Betzes) 4 = TALL (Conquest) Cm. Shorter than . 5 . . . } 1 = BETZES 2 = CALIFORNIA MARIOUT 3 = CONQUEST 4 = DICKSON Cm. Taller than } 5 = PIROLINE 6 = PRIMUS 7 = UNITAN

4. STEM:

 Exertion (Flag to spike at maturity): 1 = 0 - 3 cm. 2 = 3 - 10 cm. Anthocyanin: 1 = ABSENT 2 = PRESENT
3 = 10 - 15 cm. NO. OF NODES (Originating from node above ground) Collar Shape: 1 = CLOSED 2 = V-SHAPED 3 = OPEN Shape of Neck: 1 = STRAIGHT 2 = SNAKY
4 = MODIFIED CLOSED OR OPEN 3 = OTHER (Specify)

5. LEAF:

 Basal leaf sheath (seedling): 1 = GLABROUS 2 = PUBESCENT Position of flag leaf (at boot stage): 1 = DROOPING
2 = UPRIGHT Waxiness: 1 = ABSENT (Glossy) 2 = SLIGHTLY WAXY MM. WIDTH (First leaf below flag leaf) CM. LENGTH (First leaf below flag leaf) Anthocyanin in leaf sheath: 1 = ABSENT 2 = PRESENT

6. HEAD:

 Type: 1 = TWO-ROWED 2 = SIX-ROWED Density: 1 = LAX 2 = ERECT (Not dense)
3 = ERECT (Dense) Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE Waxiness: 1 = ABSENT (Glossy) 2 = SLIGHTLY WAXY
3 = WAXY Lateral Kernels Overlap: 1 = NONE 2 = AT TIP Rachis (Hair on edge): 1 = LACKING 2 = FEW 3 = COVERED
3 = 1/4 - 1/2 OF HEAD

7. GLUME:

 Length: 1 = 1/3 OF LEMMA 2 = 1/2 OF LEMMA Hairs: 1 = NONE 2 = SHORT 3 = LONG
3 = MORE THAN 1/2 OF LEMMA Hair covering: 1 = NONE 2 = RESTRICTED TO MIDDLE 3 = CONFINED TO BAND 4 = COMPLETELY COVERED Awns: 1 = LESS THAN EQUAL TO LENGTH OF GLUMES 2 = EQUAL TO LENGTH OF GLUMES
3 = MORE THAN EQUAL TO LENGTH OF GLUMES Awn Surface: 1 = SMOOTH 2 = SEMISMOOTH 3 = ROUGH

8. LEMMA:

☒ 5 Awn: 1 = AWNLESS 2 = AWNLETS ON CENTRAL ROWS, AWNLESS ON LATERAL ROWS
 3 = SHORT ON CENTRAL ROWS, AWNLETS ON LATERAL ROWS 4 = SHORT (less than equal to length of spike)
 5 = LONG (longer than spike) 6 = HOODED

☒ 3 Awn Surface: 0 = AWNLESS 1 = SMOOTH 2 = SEMISMOOTH 3 = ROUGH

☒ Teeth: 1 = ABSENT 2 = FEW 3 = NUMEROUS

☒ 1 Hair: 1 = ABSENT 2 = PRESENT

☒ 2 Shape of base: 1 = DEPRESSION 2 = SLIGHT CREASE
 3 = TRANSVERSE CREASE

☒ 2 Rachilla Hairs: 1 = SHORT 2 = LONG

9. STIGMA:

☒ 2 Hairs: 1 = FEW 2 = MANY

10. SEED:

☒ 2 Type: 1 = NAKED 2 = COVERED

☒ 1 Hairs on Ventral Furrow: 1 = ABSENT 2 = PRESENT

☒ 2 Length: 1 = SHORT (8.0 mm.) 2 = SHORT TO MIDLONG (7.5 - 9.0 mm.) 3 = MIDLONG (8.5 - 9.5 mm.)
 4 = MIDLONG TO LONG (9.0 - 10.5 mm.) 5 = LONG (10.0 mm.)

☒ 2 Wrinkling of hull: 1 = NAKED 2 = SLIGHTLY WRINKLED 3 = SEMIWRINKLED 4 = WRINKLED

☒ 1 Aleurone Color: 1 = COLORLESS (White or Yellow) 2 = BLUE

☐ 0 ☐ 0 PERCENT ABORTIVE

☒ 4 ☒ 1 GMS. PER 1000 SEEDS

11. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

☐ 0 SEPTORIA

☐ 0 NET BLOTCH

☐ 0 SPOT BLOTCH

☒ 1 POWDERY MILDEW

☒ 1 LOOSE SMUT

☐ 0 BACTERIAL BLIGHT

☐ 0 COVERED SMUT

☐ 0 FALSE LOOSE SMUT

☐ 0 STEM RUST

☒ 1 LEAF RUST

☐ 0 SCAB

☒ 1 SCALD

☐ 0 AY

☐ 0 BSMV

☒ 1 BYDV

☐ 0 OTHER (Specify)

12. INSECT: (0 = Not tested, 1 = Susceptible 2 = Resistant)

☐ 0 GREEN BUG

☐ 0 ENGLISH GRAIN APHID

☐ 0 CHINCH BUG

☐ 0 ARMYWORM

☐ 0 GRASS HOPPERS

☐ 0 CERIAL LEAF BETTLE

☐ 0 OTHER (Specify)

HESSIAN FLY RACES

☐ 0 GP

☐ 0 A

☐ 0 B

☐ 0 C

☐ 0 D

☐ 0 E

☐ 0 F

☐ 0 G

13. CHEMICAL (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

☒ 1 DDT

☐ 0 OTHER (Specify)

14. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Deba Abed	Seed size	Deba Abed
Leaf size	Deba Abed	Coleoptile elongation	Deba Abed
Leaf color	Deba Abed	Seedling pigmentation	Deba Abed
Leaf carriage	Deba Abed		

REFERENCES: The following publications may be used as a reference aid for the standardization of character descriptions and terms used in this form:

1. Wiebe, G. A., and D. A. Reid, 1961, Classification of Barley Varieties Grown in the United States and Canada in 1958, Technical Bulletin No. 1224, U.S. Dept. of Agriculture.
2. Reid, D. A., and G. A. Wiebe, 1968, Barley: Origin, Botany, Culture, Winter Hardiness, Genetics, Utilization Pests, Agriculture Handbook No. 338, U.S. Dept. of Agriculture. pp. 61 - 84.
3. Malting Barley Improvement Association, Milwaukee, Wisconsin, 1971, Barley Variety Dictionary.

COLOR: Nickerson's or any recognized color fan may be used to determine color of the described variety.

Corrected as per letter of Oct. 29, 1975 from NSDO